



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,879	06/25/2003	Jun Koide	02975.000090.	2255
5514	7590	08/31/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			SEVER, ANDREW T	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	
			2851	

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/602,879

Applicant(s)

KOIDE, JUN

Examiner

Andrew T Sever

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/17/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 8-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/25/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 8-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 6/17/2004.
2. Applicant's election with traverse of claims 8-18 in the reply filed on 6/17/2004 is acknowledged. The traversal is on the ground(s) that the burden on the office to examine both inventions together is not great enough to require the restriction. This is not found persuasive because as remarked in the restriction requirement mailed on 5/21/2004 claims 8-18 required an almost completely different search than claims 1-7, namely the search for the structure of a specific species of electroluminescence element is not required for the search of a lamp control, claims 8-18 only claiming the generic structure of a well known LED or OLED. Further Claims 8-18 differ from claims 1-7 in that they do not claim the structure of the projection optical system (being telecentric and having axial chromatic aberration for improving the displayed image.) Given that claims 1-7 claim specific structure of the electroluminescence element and associated structures of the projection optical system while claims 8-18 claim a generic electroluminescence element in association with lamp controller (comprising an ambient light sensor and a controller) and given these have separate classification being classified in separate subclasses (claims 1-7 being classified in subclass 31 and claims 8-18 being classified in subclass 85 of class 353), applicant's arguments are not found persuasive.

The requirement is still deemed proper and is therefore made FINAL.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamvik (US 6,520,649) in view of Forrest et al. (US 5,703,436) and Nakazawa (US 6,137,635.)

Lamvik teaches in figure 1 and further teaches a modification in column 4 lines 12-28 a projection type image display apparatus comprising:

An electroluminescence element (300) having emission pixels arranged in a two-dimensional matrix form, which emits an image modulation pattern light including an intensity distribution of the three primary colors according to an input signal based on image information; and

A projection optical system (450) that projects light emitted from the electroluminescence element onto an object (500) and display an additive color mixture image.

Lamvik does not teach the structure of the electroluminescence element. Forrest et al. teaches one electroluminescence element in figure 2A and in matrix form in figure 15 (as an array for an entire display which emits an image modulation pattern light including an intensity distribution of respective colors according to an input signal based on image information see column 15 lines 24-37). Forrest teaches an OLED (organic light emitting diode), which comprises of three luminescent layers emitting three primary colors layered (blue, green, and red layers). Forrest teaches in column 3 lines 1-22 that the electroluminescence element taught by Forrest has the advantage over prior art LED and even other prior art OLED's by being stacked; in that any color can be emitted from a common region of the display, allowing for a high definition multicolor display which is extremely reliable, substantially transparent when de-energized, and relatively inexpensive to produce as well as requiring low drive voltage for utilization in RGB displays. Given all the advantages for the stacked OLED light-source/modulator taught by Forrest, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the OLED taught by Forrest in the projection type image display apparatus of Lamvik.

Lamvik does not specifically teach the structure of the projection optical system, however the structure of such systems are well known, one example being taught by Nakazawa, which specifically teaches in column 1 lines 18-41 and lines 53-60 that it is desirous in projectors such as those taught by Lamvik to correct for on-axis chromatic aberration (axial chromatic aberration), given that different color components are

Art Unit: 2851

mounted in different positions (such as the red OLED layer being positioned farther back than the blue. Accordingly Nakazawa teaches several different methods (one expensive method given in lines 27-41 and one novel in 53-60) by which the projection optical system is given axial chromatic aberration in such a way that the positions of the plane of the luminescent layer (in Nakazawa's case where in the optical paths each of the images is formed by there respective LCD) and the plane of the object have an optically conjugate relationship at an emission intensity median point wavelength of a waveband of each of the colors. Given that Nakazawa teaches that failure to correct for this error results in not being able to adjust the focal length of the projection lens, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Lamvik's projection type display a projection optical system that includes axial chromatic aberration that corrects for the on axis-aberration of the rest of the display system as taught by Nakazawa.

With regards to applicant's claims 2:

Nakazawa teaches in column 1 lines 9-17 that is desirable in projectors such as taught by Lamvik to use an approximately telecentric projection lens in order to insure an uniformly bright image on the screen. Accordingly it would have been obvious to use a telecentric projection system.

Art Unit: 2851

With regards to applicant's claim 3:

As shown in figure 2A of Forrest the layers are arranged in the order of blue, green, and red from an emission planeside of the electroluminescence element.

With regards to applicant's claim 4:

See column 4 lines 49-67 of Forrest which teach the structure of the luminescent element, which includes an ITO transport layer and a thin film metal layer having a thickness less than 10 nm (50 angstroms to 400 angstroms equals 5 to 40 nm which includes the claimed range.) See *In re Wertheim* 541 F.2d 257, 191 USPQ 90 and *In re Woodruff*, 919 F.2d 1575, 16 USPQ 2d 1934.

With regards to applicant's claim 5:

Forrest teaches in column 4 lines 49-67 that the luminescent element uses a double-hetero structure.

With regards to applicant's claim 6:

Lamvik projects the image onto a screen (600) and those with ordinary skill in the art would recognize that an observer perceives the image by means of diffused light that has been reflected by the screen and has predetermined directivity (this is how projection screens operate).

Art Unit: 2851

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lamvik in view of Forrest and Nakazawa as applied to claims 1-6 above, and further in view of Yokoyama et al. (US 6,507,379.)

As described in more detail above Lamvik in view of Forrest and Nakzawa teaches an image display system comprising of a projection type image display apparatus which includes a electroluminescence element with three luminescent layers emitting three primary colors layered, it further includes a projection optical system which is telecentric and includes axial chromatic aberration so that the positions of the plane of the luminescent layer and the plane of the object have an optically conjugate relationship at an emission intensity median point wavelength of a waveband of each of the colors. Lamvik in view of Forrest and Nakzawa are front projection systems rather than rear projection systems (systems where an image is projected on the screen is recognized by an observer by means of diffused light that has been transmitted through the screen and has predetermined directivity.)

Yokoyama teaches in figure 14 an OLED rear projection system (as opposed to the front projection system shown in figure 15.) Changing a front projection system as taught by Lamvik in view of Forrest and Nakzawa to a rear projection system is obvious as it is well known that the two system are interchangeable and it only requires minimal rearrangement of parts (namely placing the projector behind the screen.) See in re Japikse 181 F.2d 1019, 86 USPQ 70.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 5,353,156 to Chung teaches a projection optical system used with CRTs which like OLEDs both emit light and modulate it, that has an optically conjugate relationship at an emission intensity median point wavelength of a waveband of each of the colors. See columns 1 and 2 starting at line 54 and ending at line 26.

US 6,547,400 to Yokoyama teaches in figure 4 a projection system using in one embodiment OLEDs. Yokoyama however also teaches the use of a LCD (30).

US 6,596,134 to Forrest et al. teaches a method of fabricating 3 color OLEDs and is similar to the Forrest reference cited above

US 6,741,398 to Yasui teaches a zoom lens system having axial chromatic aberration so as to have the luminescent layer and the plane of the object have an optically conjugate relationship at an emission intensity median point wavelength of a waveband of each of the colors.

US 6,769,772 to Roddy et al. teaches in figure 12 a projection device using OLED's without a separate modulator.


Art Unit: 2851

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS


JUDY NGUYEN
PRIMARY EXAMINER